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(54) **Title:** IONIC LIQUIDS FOR HETEROGENISING METALLOCENE CATALYSTS

(57) **Abstract:** The present invention discloses a method for preparing an heterogenised catalyst component comprising the steps of: a) providing a halogenated precursor component of formula (I) $-X-[-CH_2-]_n-CH_3$ b) reacting the halogenated precursor with an ionic liquid precursor in a solvent to prepare an ionic liquid; IL^+X^- c) optionally, reacting the intermediate IL^+X^- with a salt C^+A^- , wherein C^+ is a cation that can be selected from K^+ , Na^+ , NH_4^+ , and A^- is an anion that can be selected from PF_6^- , SbF_6^- , BF_4^- , $(CF_3-SO_2)_2N^-$, ClO_4^- , $CF_3SO_3^-$, NO_3^- or $CF_3CO_2^-$. d) using the ionic liquid prepared in step b) to heterogenise a metallocene component of formula (II) $R''(CpR^m)(Cp'R^n)MQ_2$ wherein Cp and Cp' are independently selected from substituted or unsubstituted cyclopentadienyl groups M is a metal selected from Group 4 of the Periodic Table, R'' is a structural bridge imparting stereorigidity between Cp and Cp' and Q is a halogen or an alkyl having from 1 to 12 carbon atoms; e) heterogenising the ionic liquid/metal system by addition of an apolar solvent inducing the precipitation reaction; f) retrieving a metallocene catalyst component heterogenised by an ionic liquid. It also discloses an active catalyst system heterogenised by an ionic liquid and its use in the polymerisation of olefins.



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